

Deriv. 55381

Work Order ID 48387

June 26, 2009 12:39:46 PM



Page 1

Item ID: D3560-043

Accept



Setup Start



Revision ID: D

Stop



Item Name: Arm Weldment

Start Date: 15/07/2009 Start Qty: 8.00



Cust Item ID:

Required Date: 03/08/2009 Req'd Qty: 8.00



Customer:

Reference:

Approvals: Process Plan:

Date: Tooling:

Date:

Run Start



QC:

Date: SPC (Y/N):

Date:

Stop



Sequence ID/ Work Center ID	Operation Description
--------------------------------	--------------------------

Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
----------------------	----------------	--------------	--------------	---------------	---------------	------------------	----------------

Draw Nbr	Revision Nbr
D3560	Rev D

100



BAND SAW

Bandsaw

Memo

Jeaspa Bandsaw

Cut blanks 15.500" long

110



HAAS CNC VERTICAL MACHINING #1

HAAS 1

Memo

HAAS CNC vertical machine #1

1- Mill as per Folio FA695 Rev: ____ & Dwg D3560 Rev: ____ 2-C'sink
0.196" hole on manual mill as per dwg D3560 3-Deburr per dwg D3560

120



QC2- Inspect parts off machine FAI/FAIB

QC

Memo

Quality Control

0.00

0.00

0.00



Work Order ID 48387

June 26, 2009 12:39:46 PM



Page 2

Item ID: D3560-043

Accept



Setup Start



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Start Date: 15/07/2009 Start Qty: 8.00



Cust Item ID:

Required Date: 03/08/2009 Req'd Qty: 8.00



Customer:

Reference:

Approvals: Process Plan:

Date:

Tooling:

Date:

Run Start



QC:

Date:

SPC (Y/N):

Date:

Stop

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run HoursDraw
NumberDraw
Rev.Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

130



QC8- Inspect parts - second check

0.00



QC

Memo

0.00

Quality Control

140



Large Fab

0.00

7 6

Large Fab

Large Fab

Memo

0.00

10.01.04
(see old w/o)

1-Weld assembly as per dwg D35601 STEP: 1- clean material (buff bracket and bottom of arm with blue pad) 2- set up bracket and arm on jig 3- preheat bracket and arm with torch 4- clean before welding with brush 5- set up machine to 135 amps 6- weld across

150



QC5- Inspect part completeness to step on W/O

0.00

QC

Quality Control

Memo

0.00

⇒ S. w. u. l. u

(7)

Work Order ID 48387

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Page 3

Item ID: D3560-043

Accept



Setup Start



Revision ID: D

Stop



Item Name: Arm Weldment

Start Date: 15/07/2009 Start Qty: 8.00



Cust Item ID:

Required Date: 03/08/2009 Req'd Qty: 8.00



Customer:

Reference:

Approvals: Process Plan:

Date:

Tooling:

Date:

Run Start



QC:

Date:

SPC (Y/N):

Date:

Stop

Sequence ID/
Work Center IDOperation
Description

160



QC

Quality Control

QC9- Inspect visual per QSI004- Fusion Welds

Set Up/
Run HoursDraw
NumberDraw
Rev.Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

0.00

0.00

PD 10-01-07 7

170



HandFinish

Chemical Conversion Coat per QSI005 4.1

0.00

0.00

BL 10-01-11 7

Hand Finishing

180



QC

Quality Control

QC3- Inspect Part Finish

0.00

0.00

SAP 10-01-11 7

Memo

Work Order ID 48387

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Page 4

Item ID: D3560-043

Accept



Setup Start



Revision ID: D

Stop



Item Name: Arm Weldment

Start Date: 15/07/2009 Start Qty: 8.00



Cust Item ID:

Required Date: 03/08/2009 Req'd Qty: 8.00



Customer:

Reference:

Approvals: Process Plan:

Date:

Tooling:

Date:

Run Start



QC:

Date:

SPC (Y/N):

Date:

Stop

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run HoursDraw
NumberDraw
Rev.Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

190



Small Fab

Small Fab

Memo

0.00

Small Fab

1-Press bushing in D3560 arm per dwg D3562

(7)

200



QC5- Inspect part completeness to step on W/O

0.00

QC

Quality Control

Memo

0.00

(7)

210

Identify as per dwg & Stock Location: WIA

0.00

Packaging

Packaging

Memo

0.00

7

Picklist Print

June 26, 2009 12:39:45 PM

Page 1

Work Order ID: 48387



Parent Item: D3560-043RevD



Parent Item Name: Arm Weldment

Start Date: 15/07/2009

Required Date: 03/08/2009

Comments:

Start Qty: 8.00

Required Qty: 8.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
---------------------------------	------------------------	---------------	-------------	---------------------	------------------	-----------------	--------------------	----------------	--------------------------	---------------	----------------	--------

✓ D2808RevB



Bushing

M6061T6B0.500X05.00
0



6061-T6 Bar .500 x 5.00

✓ D3592-1RevB



Plate

Manufactured	No
--------------	----

100	Each	0.0000	8.0000
-----	------	--------	--------

B42181

(H)

B46738

(a)



Purchased	No
-----------	----

140	f	0.0000	10.9053
-----	---	--------	---------



Manufactured	No
--------------	----

190	Each	0.0000	8.0000
-----	------	--------	--------



✓ 347015 10.01.05 = 7

EFS/10/01/12

Date: Monday, 08/06/2009 9:24:30 AM
 User: Julie Dawson

Process Sheet

Customer	CU-DAR001 Dart Helicopters Services			Drawing Name	: ARM		
Job Number	: 48387			Part Number	: D3560043		
Estimate Number	: 12883			Drawing Number	: D3560 REV D		
P.O. Number	:			Project Number	: N/A		
This Issue	: 08/06/2009 S.O. No. :			Drawing Revision	: D		
Prsht Rev.	: NC			Material	:		
First Issue	: / / Type : MACHINED PARTS			Due Date	: 15/06/2009 Qty: 8 Um: Each		
Previous Run	: 47865						
Written By	:						
Checked & Approved By	: <u>Jul 09 08.08</u>						
Comment	: Est Rev:A New Issue 07.05.24 EC						
	Est Rev B ECN 987 07.10.09 EC						
	Est Rev:C ECN1048 07-12-18 DD verified by: EC						

Additional Product

Job Number:



Seq. #:	Machine Or Operation:	Description :	
1.0	M6061T6B0500X05000	6061-T6 Bar .500 x 5.00	
	Comment: Qty.: 1.3598 f(s)/Unit Total: 10.8780 f(s) 6061-T6 Bar 0.50" x 5.00" Batch: <u>110321 x 4 parts, 1111408 x 3 parts scrap 3" flat.</u>		<u>87 09/06/09</u>
2.0	BAND SAW	BAND SAW	
	Comment: BAND SAW Cut blanks 15.500" long		<u>87 09/06/09</u>
3.0	✓ HAAS1	HAAS CNC VERTICAL MACHINING #1	
	Comment: HAAS CNC VERTICAL MACHINING #1		
	1- Mill as per Folio FA695 Rev: <u>A</u> & Dwg D3560 Rev: <u>D</u>		
	2-C'sink 0.196" hole on manual mill as per dwg D3560		
	3-Deburr per dwg D3560		<u>J.L 09/06/09</u>
4.0	✓ QC2	INSPECT PARTS AS THEY COME OFF MACHINE	
	Comment: INSPECT PARTS AS THEY COME OFF MACHINE		<u>J.L 09/06/09</u>

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Date: Monday, 08/06/2009 9:24:30 AM
User: Julie Dawson

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: ARM

Job Number: 48387

Part Number: D3560043

Job Number:



Seq. #: Machine Or Operation:

Description :

5.0 ✓ QC8

SECOND CHECK



Comment: SECOND CHECK

8/09/06/10

6.0 ✓ D35921

Plate



Comment: Qty.: 1.0000 Each(s)/Unit Total: 8.0000 Each(s)

PLATE 347015

11/09/06/23

8

7.0 ✓ LARGE FAB 1

LARGE FABRICATION RESOURCE 1



Comment: LARGE FABRICATION RESOURCE 1

1-Weld assembly as per dwg D3560

STEP:

- 1- clean material (buff bracket and bottom of arm with blue pad) *lh*
- 2- set up bracket and arm on jig *lh*
- 3- preheat bracket and arm with torch *lh*
- 4- clean before welding with brush *lh*
- 5- set up machine to 135 amps *lh*
- 6- weld across bottom and top ends *lh*
- 7- reheat with torch (65 deg C) *lh*
- 8- on one side weld from bottom to top half way *lh*
- 9- same for other side (half way) *lh*
- 10- from half way point weld the rest of the first side (ease off pedal near end) *lh*
- 11- same for remaining side (ease off pedal near end) *lh*

11/10/01/06

PTO

8

8.0 ✓ QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

Sisterly *✓*

9.0 ✓ QC9

VISUAL WELDING INSPECTION



Comment: VISUAL WELDING INSPECTION

PD 10/01/07 (7)

10.0 ✓ HAND FINISHING1

HAND FINISHING RESOURCE #1



Comment: HAND FINISHING RESOURCE #1

Chemical Conversion Coat as per QSI 005 4.1

PL 10-01-11 (7)

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: D 3560-043 GR (0-00) PAR #: Fault Category: large fins NCR: Yes ✓ No DQA: JK Date: 10.01.19
 Resolution: Re-weld Disposition: Re-weld QA: N/C Closed: JK Date: 10/02/11

NCR: 48387		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			
10.01.06	7.0	1. arm cracked bottom left side R.C: Process	<u>JK</u> <u>1251042</u>	Zip cut out weld in spot of crack and re-welded per QSI 004	<u>JK</u> <u>10.01.06</u>	<u>S</u> <u>10/01/11</u>	<u>JK</u> <u>1000-005</u>	<u>JK</u> <u>1000-005</u>

NOTE: Date & initial all entries

Date: Monday, 08/06/2009 9:24:30 AM
User: Julie Dawson

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: ARM

Job Number: 48387

Part Number: D3560043

Job Number:



Seq. #: Machine Or Operation:

Description :

11.0 ✓ QC3

INSPECT POWDER COAT/CHEMICAL CONVERSION



Comment: INSPECT POWDER COAT/CHEMICAL CONVERSION

SAD 10-01-11

12.0 ✓ D2808

Bushing



Comment: Qty.: 1.0000 Each(s)/Unit Total: 8.0000 Each(s)

Spacer
batch:

46738 (6)

B42181 (1X)

Ep/01/12

13.0 ✓ SMALL FAB 1

SMALL & MEDIUM FAB RESOURCE 1



Comment: SMALL & MEDIUM FAB RESOURCE 1

1-Press bushing in D3560 arm per dwg D3562

14.0 ✓ QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

S/01/13 (7) (7)

15.0 ✓ PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Identify and Stock

Location: WA

SAD 10-01-14 (7)

16.0 ✓ QC21

FINAL INSPECTION/W/O RELEASE



Comment: FINAL INSPECTION/W/O RELEASE

Job Completion



W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

DART AEROSPACE LTD	Work Order:	48387
Description: Arm	Part Number:	D3560-3
Inspection Dwg: D3560	Rev: D	Page 1 of 1

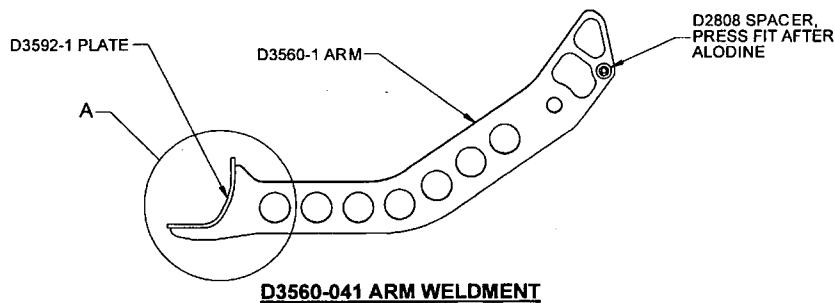
FIRST ARTICLE INSPECTION CHECKLIST

X First Article Prototype

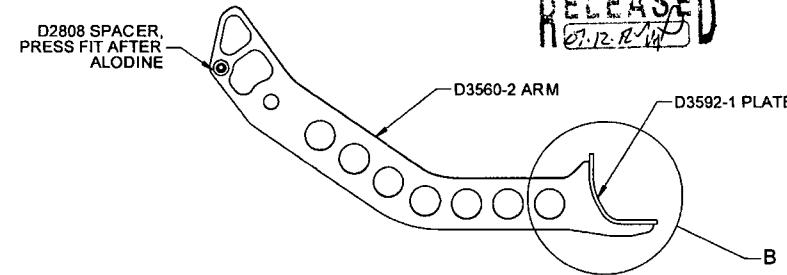
Measured by:	<u>S.L.</u>	Audited by:	<u>BB</u>	Prototype Approval:	N/A
Date:	09/06/09	Date:	09/06/10	Date:	N/A

Rev	Date	Change	Revised by	Approved
A	07.01.17	New Issue	KJ/JLM	
B	07.06.13	Dimensions updated per Dwg Rev B	KJ/JLM	
C	08.09.09	2.000 dimension removed	KJ/DD	

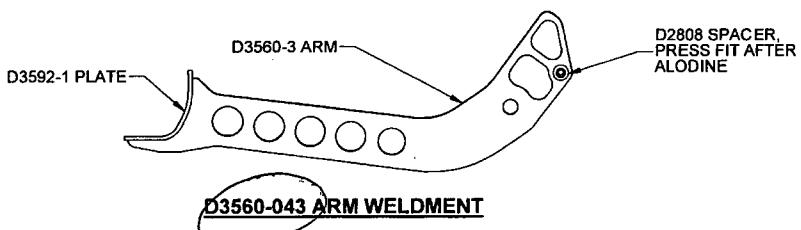
RELEASED
07.12.17/14



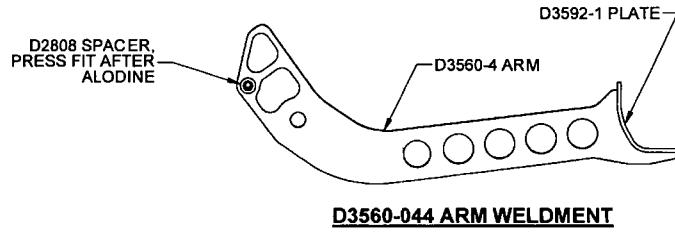
D3560-041 ARM WELDMENT



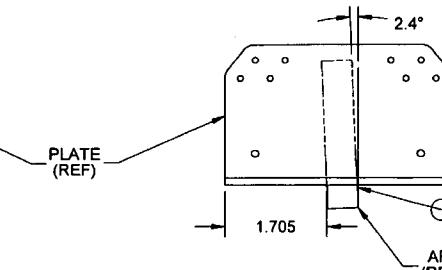
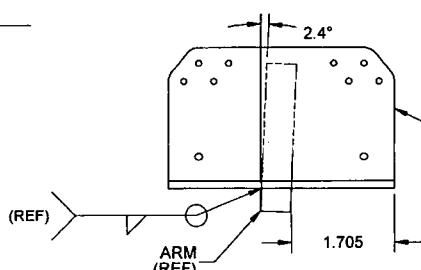
D3560-042 ARM WELDMENT



D3560-043 ARM WELDMENT



D3560-044 ARM WELDMENT



**DETAIL A
SCALE 1:2**

**DETAIL B
SCALE 1:2**

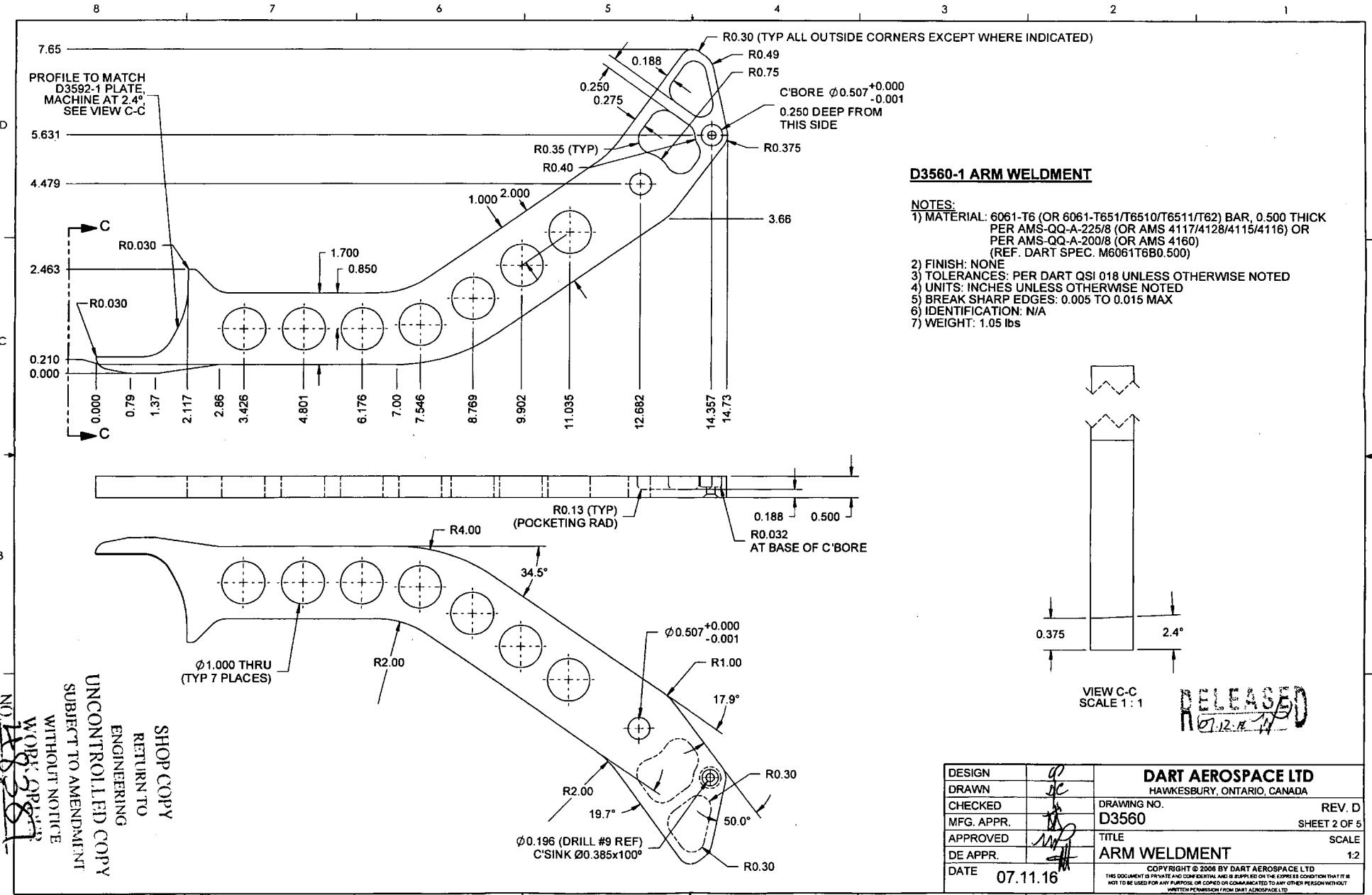
PARTS LIST

QTY -041	QTY -042	QTY -043	QTY -044	P/N	DESCRIPTION
X				D3560-041	ARM WELDMENT
	X			D3560-042	ARM WELDMENT
		X		D3560-043	ARM WELDMENT
			X	D3560-044	ARM WELDMENT
1	1	1	1	D2808	SPACER
1				D3560-1	ARM
	1			D3560-2	ARM
		1		D3560-3	ARM
			1	D3560-4	ARM
1	1	1	1	D3592-1	PLATE

D	ADD D2808 PRESS FIT NOTE; REDRAWN IN SOLIDWORKS	DC	07.11.16			
C	REMOVE POWDER COAT	CP	07.06.19			
B	REDESIGN AS WELDMENT, ADD POCKETS	CP	07.01.15			
A	NEW ISSUE	CP	06.09.25			
REV.	DESCRIPTION					
DESIGN	BY DATE					
DRAWN	JPC					
CHECKED	JPC					
MFG. APPR.	D3560					
APPROVED	JPC					
DE APPR.	JPC					
DATE	07.11.16					
DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA						
DRAWING NO. REV. D D3560 SHEET 1 OF 5						
TITLE SCALE ARM WELDMENT 1:4						
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NO. 100-100-100-100
W.H. 838
S. 100-100-100-100
E. 100-100-100-100
C. 100-100-100-100
P. 100-100-100-100
D. 100-100-100-100
F. 100-100-100-100
G. 100-100-100-100
H. 100-100-100-100
I. 100-100-100-100
J. 100-100-100-100
K. 100-100-100-100
L. 100-100-100-100
M. 100-100-100-100
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Q. 100-100-100-100
R. 100-100-100-100
S. 100-100-100-100
T. 100-100-100-100
U. 100-100-100-100
V. 100-100-100-100
W. 100-100-100-100
X. 100-100-100-100
Y. 100-100-100-100
Z. 100-100-100-100

NOTES:
 1) MATERIAL: N/A
 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
 4) UNITS: INCHES UNLESS OTHERWISE NOTED
 5) BREAK SHARP EDGES: 0.005 TO 0.015 MAX
 6) IDENTIFICATION: N/A
 7) WEIGHT: 1.23 lbs (TYP)
 8) WELDING: PER DART QSI 004



1

□

C BORE Ø0.307 -0.001
0.250 DEEP FROM
THIS SIDE

This technical drawing illustrates a mechanical part's dimensions and features. The top view shows a complex profile with multiple holes and radii. Key dimensions include:

- Vertical height: 7.65, 5.631, 4.479, 3.66, 0.000, 0.210, 1.37, 0.79, 2.463, 2.117, 3.426, 2.86, 4.801, 6.176, 7.00, 7.546, 8.769, 9.969, 11.035, 12.682, 14.357, 14.73, 0.507, 0.375, 0.40, 0.275, 0.250, 0.188, 0.188, 0.0507, and 0.0001.
- Horizontal distances: 1.000, 1.700, 0.850, and 2.000.
- Radiuses: R0.35 (TYP), R0.40, R0.030, R0.030, R0.032, R0.13 (TYP) (POCKETING RAD), R4.00, R2.00, R1.00, R0.30, and R0.30.
- Angles: 34.5°, 17.9°, 19.7°, 50.0°, and 50.0°.

The side view provides additional details:

- Base of C'BORE: R0.032.
- Drill hole: Ø 0.385 x 100°.
- Radiuses: R0.30, R2.00, and R2.00.
- Dimensions: Ø 0.507 +0.000 -0.001.
- Through hole: Ø 1.000 THRU (TYP 7 PLACES).

Textual annotations include:

- DEEP FROM THIS SIDE
- (DRILL #9 REF)
- SHOP COPY
- RETURN TO
- D
- D

PROFILE TO MATCH
D3592-1 PLATE,
MACHINE AT 2.4°,
SEE VIEW D-D

D3560-2 ARM

NOTES:

- 1) MATERIAL: 6061-T6 (OR 6061-T651/T6510/T6511/T62) BAR, 0.500 THICK PER AMS-QQ-A-225/8 (OR AMS 4117/4128/4115/4116) OR PER AMS-QQ-A-200/8 (OR AMS 4160) (REF. DART SPEC. M6061TB0.500)
- 2) FINISH: NONE
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.015 MAX
- 6) IDENTIFICATION: N/A
- 7) WEIGHT: 1.05 lbs

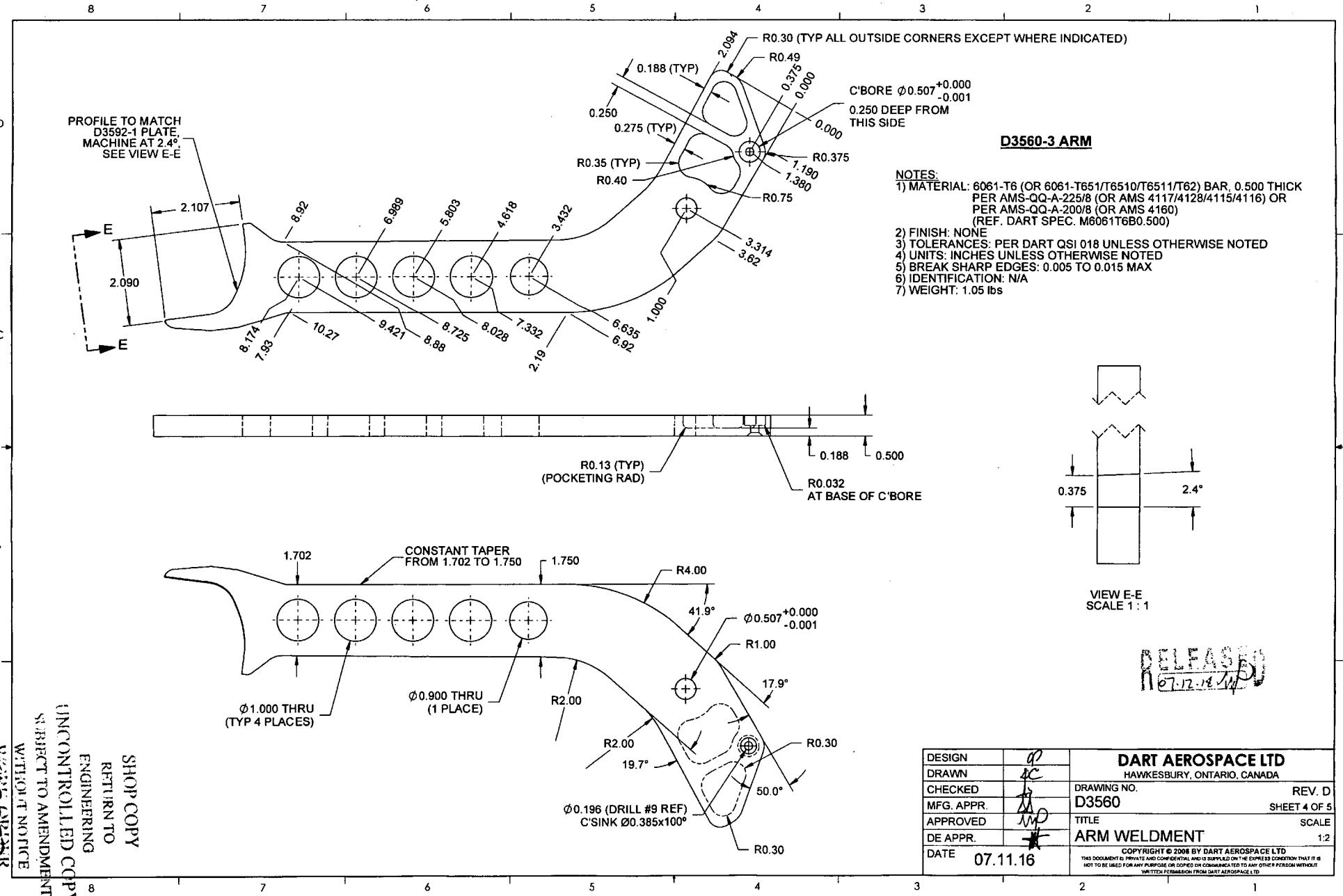


VIEW D-D
SCALE 1:1

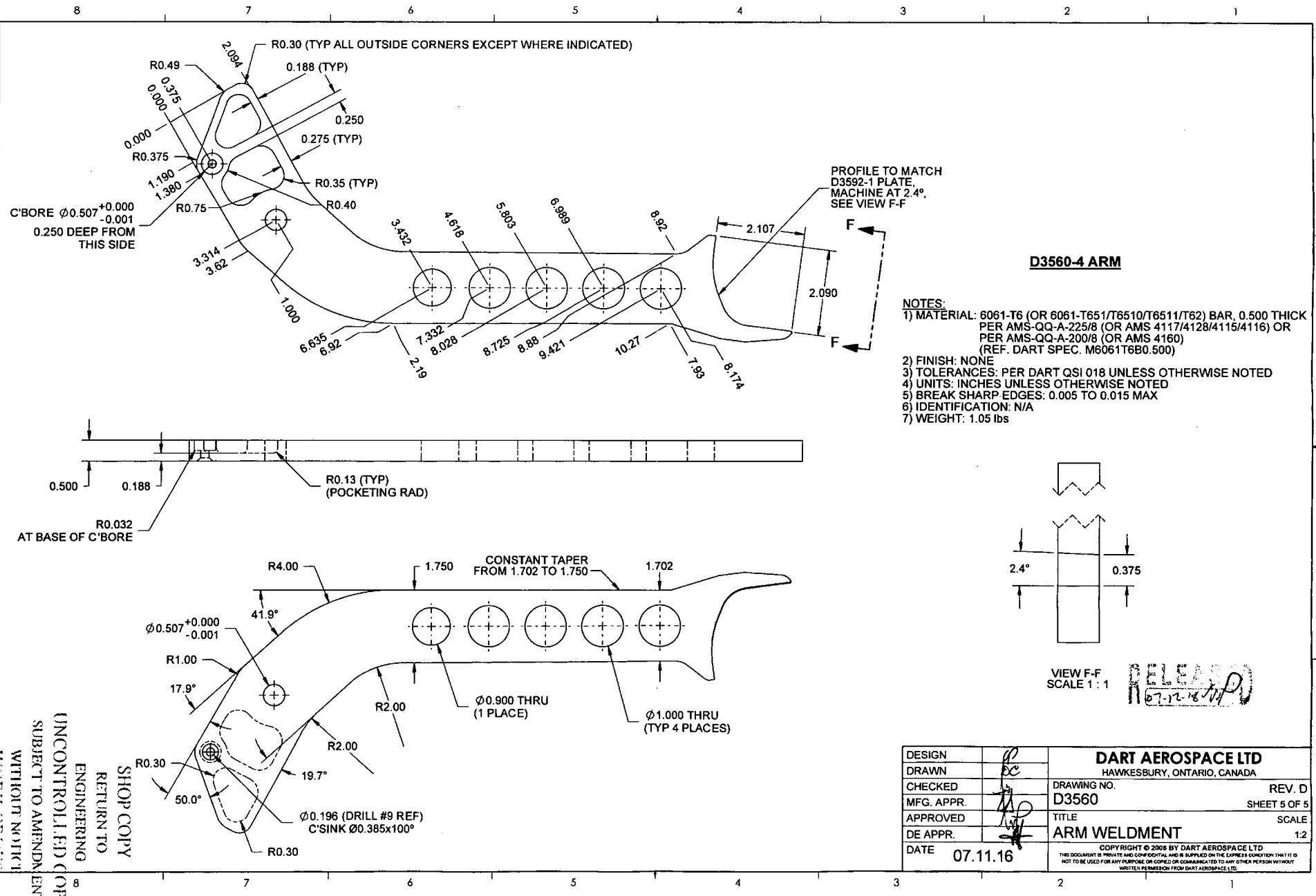
196 (DRILL)
SINK Ø0.3
RETURN TO
ENGINEERING
CONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE

DESIGN	90	DART AEROSPACE LTD	
DRAWN	4C	HAWKESBURY, ONTARIO, CANADA	
CHECKED	12	DRAWING NO.	REV. D
MFG. APPR.	14	D3560	SHEET 3 OF 5
APPROVED	AM	TITLE	SCALE
DE APPR.	AM	ARM WELDMENT	
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DRAWN	<i>QC</i>	HAWKESBURY, ONTARIO, CANADA	
CHECKED	<i>QC</i>	DRAWING NO. D3560	
MFG. APPR.	<i>QC</i>	REV. D SHEET 4 OF 5	
APPROVED	<i>QC</i>	TITLE ARM WELDMENT	
DE APPR.	<i>QC</i>	SCALE 1:2	
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DRAWN	<i>DC</i>	HAWKESBURY, ONTARIO, CANADA	
CHECKED	<i>b</i>	DRAWING NO.	REV. D
MFG. APPR.	<i>AP</i>		D3560
APPROVED	<i>WJ</i>	TITLE	SCALE
DE APPR.	<i>SH</i>		ARM WELDMENT
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